



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,058	10/06/2000	Ching -Hsiang Chan	64600-070	1605

7590 08/01/2002

Tung & Associates
838 W. Long Lake Road Suite 120
Bloomfield Hills, MI 48302

EXAMINER

JORGENSEN, LELAND R

ART UNIT	PAPER NUMBER
----------	--------------

2675

DATE MAILED: 08/01/2002

2

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/684,058

Applicant(s)

CHAN ET AL.

Examiner

Leland R. Jorgensen

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "66" has been used to designate both a compressible spring and an outer periphery. Page 15. It appears that the compressible spring should be labeled 76. A proposed drawing correction or corrected drawings (or correction to the specification) are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman et al., USPN 4,675,569, in view of Flowers et al., USPN 5,038,142, and Plesinger, USPN 5,146,354.

Claim 1 and 10

Claim 1 describes a touch screen mounting assembly for a liquid crystal display (LCD) panel. Claim 10 describes a method for fabricating a touch screen mounting assembly for use on

Art Unit: 2675

a LCD panel. Bowman teaches a touch screen mounting assembly. Bowman, col. 1, lines 5 –9. Bowman teaches that the mounting assembly supports a touch sensitive screen having a plurality of pressure-sensitive transducers. Bowman, col. 3, lines 19 – 25. Bowman does not teach the backlighted LCD panel or all the details of the mounting assembly as described in claim 1.

Plesinger teaches a touch screen mounting assembly for a liquid crystal display (LCD) panel. The mounting assembly has a bottom frame [backframe 120] having a substantially rectangular-shaped cavity therein for mounting a backlight panel [104] thereto. The bottom frame is equipped with a plurality of attachment means. Plesinger, col. 5, lines 14 – 55; and figure 5.

Plesinger teaches a backlight panel [light pipe 104] for supplying illumination to the LCD panel and for mounting to the bottom frame, the backlight panel having a front surface [108] opposite to a back surface that faces the bottom frame. Plesinger, col. 3, lines 46 – 57; col. 5, lines 28 - 32; and figures 2 and 5.

Plesinger teaches a liquid crystal display panel [112] positioned juxtaposed to the front surface of the backlight panel. Plesinger, col. 3, lines 46 – 57; and figure 2.

Plesinger teaches a top frame for holding the plurality of attachment means against the bottom frame by a plurality of tabs mounted peripherally on the top frame. Plesinger, col. 5, lines 28 – 55.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the mounting assembly with backlighted LCD panel of Plesinger with the touch sensitive screen having a plurality of pressure-sensitive transducers as taught by Bowman. Plesinger teaches, “Liquid crystal displays (LCD's) are commonly used in portable computer

Art Unit: 2675

systems, televisions and other electronic devices.” Plesinger, col. 1, lines 12 –14. Plesinger notes, “Backlighting the LCD panel has become the most popular source of light in portable computer systems because of the improved contrast ratios and brightnesses possible.”

Plesinger, however, does not teach that each of the plurality of attachment means have a compressible springs and such that the plurality of compressible springs bias the LCD panel toward the bottom frame.

Flowers teaches a plurality of compressible springs [beam springs 5] in a frame assembly to hold a touch panel. Flowers, col. 2, lines 40 – 58.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the compression springs of Flowers with the touch screen mounting assembly for a LCD panel as taught by Plesinger and Bowman. Flowers teaches the advantages of a spring.

In the present invention, the problems are solved by directly supporting the entire mass of the display screen or display element itself on springs. The springs are made relatively stiff and are so mounted as to provide essentially unidirectional or uniaxial freedom of motion only. The stiffness of the springs limits the excursion of the supported display device to a single axis over very small latitude which makes the assembly robust enough for withstanding stresses of use and physical shipment of the assembly.

Flowers, col. 3, lines 30 – 40. Flowers invites one to use its assembly and method for any number of displays, including an LCD display.

Briefly, in the current invention, any desired electro-optical display such as a cathode ray tube (CRT), a cold plasma display screen, a liquid crystal display (LCD), light emitting diode displays (LEDs), electroluminescent panels, incandescent or neon bulb panels or any similar "electro-optic" display device is supported directly upon a plurality of beam springs.

Flowers, 2, lines col. 40 – 47.

Claim 2

Claim 2 is dependant on claim 1. Bowman, Flowers and Plesinger teach that the bottom frame being equipped with four attachment means situated at four distant corners of the bottom frame. Bowman, figure 1; Flowers, figures 1 and 2; and Plesinger, figure 2.

Claim 3 and 11

Claim 3 is dependant on claim 1. Claim 11 is dependant on claim 10. Bowman teaches that the plurality of attachment means each consists of a threaded stud having a shaft portion and two end portions, a coil spring situated on and encircle the threaded stud, two fastening means each engaging one of the two end portions. Bowman, figure 4.

Claim 4 and 12

Claim 4 is dependant on claim 3. Claim 12 is dependant on claim 11. Plesinger and Bowman teach that one of the two fastening means being fastened to the bottom frame while the other fastening means being fastened to the top frame. Plesinger, col. 5, lines 14 – 55; and figure 5; and Bowman, figure 4.

Claim 5 and 16

Claim 5 is dependant on claim 1. Claim 16 is dependant on claim 10. Bowman teaches pressure-sensitive transducers, each mounted to a distant corner on the front surface of the panel. Bowman, col. 3, lines 20 – 23; and figure 1.

Claim 6

Claim 6 is dependant on claim 1. It is inherent that the plurality of pressure-sensitive transducers described in Bowman are each in electrical communication with a pressure-sensing circuit through a wiring. Bowman, col. 3, lines 26 – 27.

Claim 7 and 17

Claim 7 is dependant on claim 1. Claim 17 is dependant on claim 10. Bowman teaches that the plurality of pressure-sensitive transducers are piezoelectric sensors. As shown in figure 1, a sensor 38 is mounted at each distant corner of the panel. Bowman, col. 3, lines 20 - 23 and figure 1.

Claim 8

Claim 8 is dependant on claim 1. Plesinger teaches a protective film. Plesinger, col. 3, lines 2 - 4.

Claim 9 and 14

Claim 9 is dependant on claim 1. Claim 14 is dependant on claim 10. Bowman teaches that the pressure-sensitive transducers are mounted by adhesive means. Bowman, col. 3, lines 20 - 23.

Claim 13

Claim 13 is dependant on claim 11. Plesinger and Bowman teach fastening the two fastening means to fastening tabs provided on an outer periphery of the bottom frame and the top frame, respectively. Plesinger, col. 5, lines 14 - 55; and figure 5; and Bowman, figure 4.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman et al., in view of Flowers et al. and Plesinger as applied to claim 1 above, and further in view of Garwin et al., USPN 4,511,760.

Claim 15

Claim 15 is dependant on claim 10. Claim 15 describes that the method further comprises the steps of providing a pressure-sensing circuit; receiving signals from the plurality of pressure-sensitive transducers by the pressure-sensing circuit; and calculating the pressure at each distant corner of the bottom frame to determine a location on the LCD panel that was touched. Bowman teaches providing a pressure-sensing circuit and receiving signals from the plurality of pressure-sensitive transducers by the pressure-sensing circuit. Bowman, col. 3, lines 20 – 36.

Bowman does not teach calculating the pressure at each distant corner of the bottom frame to determine a location on the panel that was touched. Bowman, however, invites one to use Garwin, USPN 4, 511,760.

The techniques employed for processing the piezoelectric signals to determine where the push plate was touched are beyond the scope of this invention. One example of a technique that might be used is taught in U.S. Pat. No. 4,511,760, which is assigned to the assignee of the present invention.

Bowman, col. 3, lines 31 – 36.

Garwin teaches calculating the pressure at each distant corner of the bottom frame to determine a location on the panel that was touched. Garwin, col. 4, lines 39 – 66.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the technique of Garwin to calculate the signals received from the pressure-sensitive transducers of Bowman to find the point on the screen that was touched.

Art Unit: 2675

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sampson, USPN 4,898,555, teaches a display screen bezel and assembly method.

Yates, IV, USPN 5,579,036 teach a touch screen device and shielding bracket.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland Jorgensen whose telephone number is 703-305-2650. The examiner can normally be reached on Monday through Friday, 7:00 a.m. through 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703-305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, telephone number (703) 306-0377.



STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

lrj